Cancer Care Ontario

Action Cancer Ontario

Symptom Management Pocket Guides:

DELIRIUM
DYSPNEA
NAUSEA & VOMITING
PAIN
LOSS OF APPETITE
BOWEL CARE
ORAL CARE

August 2010/July 2012

Ontario
Cancer Care Ontario
Action Cancer Ontario

August 2010

Table of Contents

Delirium 1
Dyspnea 11
Nausea & Vomiting 25
Pain 35
Loss of Appetite 53
Bowel Care 67
Oral Care 81
ESAS 97

Click on hyperlink to go to specific symptom.

Delirium

Page

Considerations 1
Assessment 2
Diagnosis 3
Non-Pharmacological treatment 3
Pharmacological treatment 5
Mild Delirium..... 6
Moderate Delirium..... 6
Severe Delirium 7
Adverse Effects 7
Selected References 9

Considerations

- The underlying etiology needs to be identified in order to intervene.
- Delirium may interfere with the patient's ability to report other symptom experiences.
- Provide explanation and reassure the family that the symptoms of delirium will fluctuate, are caused by the illness, are not within the patient's control, and the patient is not going 'insane'.
- Some hallucinations, nightmares, and misperceptions may reflect unresolved fears, anxiety or spiritual passage.
- Include the family in decision making, emphasizing the shared goals of care; support caregivers.

- Correct reversible factors – infection, constipation, pain, withdrawal, drug toxicity.
- Review medications; consider opioid rotation to reverse opioid neurotoxicity; discontinue unnecessary drugs or prolong dosing interval for necessary drugs.
  - Anticipate the need to change treatment options if agitation develops, particularly in cases where patient, family and staff safety may become threatened.
  - Misinterpreting symptoms of agitation/ restlessness, moaning and/or grimacing as poorly controlled pain, with subsequent administration of more opioids, can potentially aggravate the symptom and cause opioid neurotoxicity.

Assessment

- Ongoing comprehensive assessment is the foundation of effective management of delirium and restlessness including interview, physical assessment, medication review, medical and surgical review, psychosocial review, review of physical environment and appropriate diagnostics.
- Delirium may interfere with optimal pain and symptom expression (self-reporting), assessment and management.
- In situations where a patient is not able to complete an assessment by self reporting, then the health professional and/or the caregiver may act as a surrogate.

Diagnosis

- Identifying the underlying etiology of the delirium or restlessness is essential in determining the interventions required.
- The causes of delirium are usually multi-factorial (See table below, adapted from Capital Health).
- Determining the underlying etiology, education/reassuring the patient/family and treating the symptoms should occur simultaneously.

D	Drugs, drugs, drugs, dehydration, depression
E	Electrolyte, endocrine dysfunction (thyroid, adrenal), ETOH (alcohol) and/or drug use, abuse or withdrawal
L	Liver failure
I	Infection (urinary tract infection, pneumonia, sepsis)
R	Respiratory problems (hypoxia), retention of urine or stool (constipation)
I	Increased intracranial pressure;
U	Uremia (renal failure), under treated pain
M	Metabolic disease, metastasis to brain, medication errors/omissions, malnutrition (thiamine, folate or B12 deficiency)

Non-Pharmacological Treatment

- Report hallucinations that become threatening.
- Instruct the family to provide gentle, repeated reassurance and avoid arguing with the patient.

- Watch for the “sun downing” effect (nocturnal confusion) , as it may be the first symptom of early delirium.
- Provide a calm, quiet environment and help the patient reorient to time, place and person (visible clock, calendar, well known or familiar objects).
- Presence of a well known family member is preferred.
- Provide a well lit, quiet environment. Provide night light.
- To prevent over-stimulation, keep visitors to a minimum, and minimize staff changes and room changes.
- Correct reversible factors – dehydration, nutrition, alteration in visual or auditory acuity (provide aids), sleep deprivation.
- Avoid the use of physical restraints and other impediments to ambulation. Avoid catheterization unless urinary retention is present.
- Encourage activity if patient is physically able.
- When mildly restless provide observation and relaxation techniques (massage, tub baths, gentle music) as applicable.
- Encourage the family to be present in a calming way.

Pharmacological Treatment

- Review medications; consider opioid rotation to reverse opioid neurotoxicity
- Consider psychotropic drugs for patients developing "sun downing" effect (confusion in the evening).
- Anticipate the need to change treatment options if agitation develops – particularly in cases where patient, family and staff safety may become threatened.
- Benzodiazepines may paradoxically excite some patients and should be avoided unless the source of delirium is alcohol or sedative drug withdrawal, or when severe agitation is not controlled by the neuroleptic.
- If patient has known or suspected brain metastases a trial of corticosteroids is worthwhile.
    - Dexamethasone 16 - 32 mg po daily in the morning may be used (*Suggestion is based on expert opinion and doses may vary from region to region*).
- Misinterpreting symptoms of agitation/ restlessness, moaning and/or grimacing as poorly controlled pain, with subsequent administration of more opioids, can potentially aggravate the symptom and cause opioid neurotoxicity.
- Titrate starting dose to optimal effect.

Mild Delirium

- Orient patient as per non-pharmacological recommendations.

Pharmacological

- Haloperidol is the gold standard for management of delirium.
- If titration with haloperidol is not effective consider using methotrimeprazine.
- Haloperidol 0.5-1 mg po / subcut bid-tid
- Alternate agents:
  - Risperidone 0.5-1 mg po bid
  - Olanzapine 2.5–15 mg po daily
  - Quetiapine fumarate 50-100 mg po bid
  - Methotrimeprazine 5-12.5 mg po OR 6.25-12.5 mg subcut q4-6h prn
  - Chlorpromazine 25-50 mg po q4-6h prn

Moderate Delirium

Pharmacological

- Haloperidol 0.5-2 mg subcut q1h prn until episode under control; may require a starting dose of 5 mg subcut
- Alternate agents:
  - Risperidone 0.5-1 mg po bid
  - Olanzapine 2.5-15 mg po daily
  - Quetiapine fumarate 50-100 mg po bid
- Benzodiazepines may paradoxically excite some patients and should be avoided unless the source

of delirium is alcohol or sedative drug withdrawal, or when severe agitation is not controlled by the neuroleptic

Severe Delirium

- Titrate starting dose(s) to optimal effect.
- If agitation is refractory to high doses of neuroleptics, (as outlined in moderate delirium) consider adding lorazepam 0.5-2 mg subcut q4-6h prn or midazolam 2.5-5 mg subcut q1-2h prn in conjunction with the neuroleptic.

Alternate agents to consider:

  - Methotrimeprazine 12.5–25 mg subcut q8-12h and q1h prn OR
  - Chlorpromazine 25-50 mg po/subcut q4-6h prn.

- If above not effective consider:
  - Haloperidol 10 mg subcut. Typically, in palliative care the maximum dose of haloperidol is 20 mg/day OR
  - Methotrimeprazine 25-50 mg subcut q6-8h and q1h prn.

Adverse Effects of Medications Used to Treat Delirium

- Extrapyramidal side effects (EPS) are common adverse events of neuroleptics, with the newer atypical neuroleptics having a lower risk of EPS than the older typical neuroleptics.

- Potentially all dopamine antagonists can cause EPS, to varying degrees, due to the D2 central antagonist actions.
- Manifestations of EPS are usually dose dependent. Extrapyramidal side effects may include: acute dystonia, akathisia, and Parkinson-like signs/symptoms.
- Akathisia and acute dystonias tend to resolve with discontinuation of the offending drug.
- For the treatment of mild cases one should consider discontinuation of the drug or switching to a less antidopaminergic agent if possible.
- If pharmacologic management is needed, then consider benztropine (1st line) 1-2 mg po/subcut bid (or 2mg IM/IV for acute dystonic reactions). Alternative medications include biperiden 2 mg po bid or diphenhydramine 25-50 mg po/subcut bid to qid (or 25-50 mg IV/IM for acute dystonia).

Selected References

1) Fraser Health. Hospice Palliative Care Program Symptom Guidelines: Delirium/Restlessness. Fraser Health Website, 2006. Accessed: August 2008. Available from: http://www.fraserhealth.ca/media/07FHSymptomGuidelinesDelirium.pdf
2) Common Questions by Capital Health, Regional Palliative Care Program Edmonton, 3rd Edition, 2006, Pg. 60.
3) Adapted with permission from the National Comprehensive Cancer Network. Clinical Practice Guidelines in Oncology Palliative Care. V.2.2011. Website: http://www.nccn.org/professionals/physician_gls/f_guidelines.asp

For full references and more information please refer to CCO's Symptom Management Guide-to-Practice: Delirium document.

Disclaimer:

Care has been taken by Cancer Care Ontario's Symptom Management Group in the preparation of the information contained in this pocket guide.

Nonetheless, any person seeking to apply or consult the pocket guide is expected to use independent clinical judgment and skills in the context of individual clinical circumstances or seek out the supervision of a qualified specialist clinician.

CCO makes no representation or warranties of any kind whatsoever regarding their content or use or application and disclaims any responsibility for their application or use in any way.

Notes:

Dyspnea

	Page
Considerations	**11**
Non-Pharmacological treatment	**12**
Pharmacological treatment	**13**
Mild Dyspnea	**13**
Moderate Dyspnea	**15**
Severe Dyspnea	**17**
Oxygen Cost Diagram	**22**
Selected References	**23**

Considerations

- Because dyspnea is subjective, the patient's self report of symptoms should be acknowledged and accepted.
- Identify and treat common exacerbating medical conditions underlying dyspnea or shortness of breath, e.g. COPD, CHF, pneumonia (link to table in guide).
- Evaluate impact of anxiety and fear on dyspnea and treat appropriately.
- Use **Edmonton Symptom Assessment System** (ESAS) and **Oxygen Cost Diagram (OCD)** (See OCD) to measure outcome.

Non-Pharmacological Treatments

- Ambient air flow can be achieved by opening a window, using a fan, or administering air through nasal prongs.
- Cool temperatures can be applied to the brow or upper cheek bones by applying a cool cloth or opening a window to let cooler air in.
- A program of **cognitive behavioural interventions** involving the following 6 interventions for a time period of 3 to 8 weeks is recommended:
    1) Assessment of breathlessness – what improves and what worsens it
    2) Provision of information and support for patients and families in the management of breathlessness
    3) Exploration of the significance of breathlessness with patients, their disease, and their future
    4) Instruction on breathing control, relaxation and distraction techniques and breathing exercises
    5) Goal setting to enhance breathing and relaxation techniques as well as to enhance function, enable participation in social activities and develop coping skills
    6) Identification of early signs of problems that need medical or pharmacotherapy intervention

These suggestions should be taught as preventative strategies, when patients are not dyspneic, and regular practice should be encouraged.

Mild Dyspnea ESAS 1 to 3

- **Supplemental oxygen is recommended for hypoxic patients experiencing dyspnea.**
- **Supplemental oxygen is <u>not</u> recommended for non-hypoxic, dyspneic patients.**

Non-hypoxic Patients (>90% O_2 saturation) [1]
For patients with PPS 100% - 10%:
Use a fan or humidified ambient air via nasal prongs (as per patient preference and availability). This is not covered by the Ontario Ministry of Health and Long-Term Care (MOHLTC)

- If effective and tolerated, then utilize one or the other.
- If not effective or not tolerated, consider a trial of humidified, supplemental oxygen via nasal prongs – assess benefits over a few days and discontinue if no benefit reported for dyspnea (covered by MOHLTC on the Home Oxygen program for up to 3 months if the "palliative care" indication is used).

[1] ≤88% oxygen saturation at rest or on exertion is the threshold for MOHLTC approval of funding for home oxygen for palliative care patients beyond 3 months; for some patients ≤90% oxygen saturation may be a more appropriate threshold for introducing home oxygen therapy.

Hypoxic Patients (≤90% O_2 saturation at rest or on exertion)

For Patients with PPS 100% - 10%:

Use humidified, supplemental oxygen via nasal prongs, continuously or as-needed, at flow rates between 1 and 7 litres per minute, aiming for oxygen saturations over 90% or improvement in dyspnea at tolerated flow rates.

- Continue this therapy if it is effective at improving dyspnea and is tolerated.
- If dyspnea and low oxygen saturation persist despite maximum-tolerated flow of humidified, oxygen by nasal prongs, consider offering a trial of supplemental oxygen by oxymizer (nasal cannulae with reservoir), ventimask or non-rebreathing mask to deliver a more predictable fraction of inspired oxygen to the lungs. If this is not tolerated, the patient can return to the best-tolerated flow of humidified oxygen by nasal prongs or discontinue supplemental oxygen altogether.

- **Systemic opioids, by the oral or parenteral routes, can be used to manage dyspnea in advanced cancer patients.**

For patients with PPS 100-10%:

Other pharmacological treatments are not generally needed for patients with mild dyspnea, regardless of their PPS; however, systemic opioids (oral or parenteral) may be considered if non-pharmacological approaches result in inadequate relief of dyspnea.

- Consider systemic opioids for mild, continuous dyspnea, not for dyspnea that is mild and intermittent (eg. on exertion) since

any benefit is limited by the time to onset of effect.

- If systemic opioids are considered, weigh their potential risks and benefits and reassess the severity of the dyspnea and the effect the dyspnea has on the patient's function.
- If the patient is already taking a systemic opioid for another indication, such as pain
  - titrate the dose of the same opioid, if it is well-tolerated, to improve the dyspnea
  - switch to an alternate opioid, if the current opioid is not tolerated, and titrate it to improve the dyspnea
- If the patient is opioid naïve, introduce an opioid to treat the dyspnea.

Properly titrated, systemic opioids do not produce respiratory depression.

Moderate Dyspnea ESAS 4 to 6

For Patients with PPS 100% - 10%:

Non Opioids

- May use benzodiazepines for anxiety.
- There is no evidence for the use of systemic corticosteroids

Systemic Opioids

For opioid-naïve patients:

- Morphine (or equivalent dose of alternate immediate-release opioid) 5mg po q4h

regularly and 2.5mg po q2h PRN for breakthrough dyspnea

- If the oral route is not available or reliable, morphine 3 mg subcut q4h regularly and 1.5 mg subcut q1h PRN for breakthrough dyspnea.

For patients already taking systemic opioids:

- Increase the patient's regular dose by 25%, guided by the total breakthrough doses used in the previous 24 hours
- The breakthrough dose is 10% of the total 24-hour regular opioid dose, using the same opioid by the same route.
  - oral breakthrough doses q2 hrs as needed
  - subcutaneous breakthrough doses q1hr as needed, due to more rapid peak effect.
- Do not use nebulized opioids, nebulized furosemide, nebulized lidocaine or benzodiazepines.

For Patients with PPS 100% - 20%

- If patient has or may have COPD, consider a 5-day trial of a corticosteroid
  - Dexamethasone 8 mg/day po or subcut or IV
  - Prednisone 50 mg/day po
  - Discontinue corticosteroid if there is no obvious benefit after 5 days
- If the patient does not have COPD, but has known or suspected lung involvement by the cancer, weigh the risks before commencing a 5-day trial
  - Other potential benefits, such as for appetite stimulation or pain management, may justify a 5-day trial of a corticosteroid

- Do not start prophylactic gastric mucosal protection therapy during a 5-day trial of a corticosteroid, but consider such therapy if the corticosteroid is continued past the trial
- Prochlorperazine is not recommended as a therapy for managing dyspnea.
- No comparative trials are available to support or refute the use of other phenothiazines, such as chlorpromazine and methotrimeprazine.

For Patients with PPS 30% - 10%:

- Consider a trial of chlorpromazine or methotrimeprazine, if dyspnea persists despite other therapies
  - Methotrimeprazine 2.5-10 mg po or subcut q6-8h regularly or as needed
  - Chlorpromazine 7.5-25 mg po q6-8h regularly or as needed
- Anxiety, nausea or agitation, may justify a trial of chlorpromazine or methotrimeprazine

Severe Dyspnea ESAS 7 to 10

For Patients with PPS 100% - 10%:

Systemic Opioids

For opioid-naïve patients:

- Give a subcut bolus of morphine 2.5 mg (or an equivalent dose of an alternate opioid).
  - If tolerated, repeat dose every 30 minutes if needed.
  - Consider doubling dose if 2 doses fail to produce an adequate reduction in dyspnea and are tolerated

- Monitor the patient's respiratory rate closely, since the time to peak effect of a sc dose of morphine may be longer than 30 minutes

- If intravenous access is available, consider giving an IV bolus of morphine 2.5 mg (or an equivalent dose of an alternate opioid) to achieve a more rapid effect.
  - If tolerated, repeat dose every 30 minutes if needed.
  - Consider doubling dose if 2 doses fail to produce an adequate reduction in dyspnea and are tolerated
  - Monitor the patient's respiratory rate closely, since IV boluses of morphine result in faster and higher peak effects.
- Start a regular dose of an immediate-release opioid, guided by the bolus doses used
  - For the breakthrough opioid dose, consider using the subcut route initially for severe dyspnea until the symptom comes under control.

For patients already taking systemic opioids:

- Follow the same suggestions as above for opioid naïve patients, with the following changes.
  - Give a subcut bolus of the patient's current opioid using a dose equal to 10% of the regular, 24-hour, parenteral-dose-equivalent of the patient's current opioid (a parenteral dose is equivalent to half the oral dose)
  - Consider giving an IV bolus of the patient's current opioid, using a dose equal to 10% of the regular, 24-hour, parenteral-

dose-equivalent of the patient's current opioid
- Increase the regular opioid dose by 25%, guided by the bolus doses used

Phenothiazines

- Consider a trial of chlorpromazine or methotrimeprazine, if severe dyspnea persists despite other therapies.
- Methotrimeprazine 2.5-10 mg po or subcut q6-8h regularly or as needed
- Chlorpromazine 7.5-25 mg po or IV q6-8h regularly or as needed
- Consider benzodiazepine for co-existing anxiety

Titration Guide

General principles:

1. Calculate the total opioid dose taken by the patient in 24 h (regular q4h dose x 6 **PLUS** the total number of breakthrough doses given x breakthrough dose).
2. Divide this 24 h total by 6 for the equivalent q4h dose.
3. Divide the newly calculated q4h dose by 2 for the breakthrough dose.
4. Use clinical judgment regarding symptom control as to whether to round up or down the obtained result (both breakthrough and regular dosing). Remember to consider available doses (in the case of PO medications especially).
5. If the patient is very symptomatic, a review of how many breakthrough doses have been given in the past few hours might be more representative of his/her needs.

Example:

A patient is ordered morphine 20 mg q4h PO and 10 mg PO q2h PRN, and has taken 3 breakthrough doses in the past 24 h.

1. Add up the amount of morphine taken in the past 24 h: 6 x 20 mg of regular dosing, plus 3 x 10 mg PRN doses equals a total of 150 mg morphine in 24 h
2. Divide this total by 6 to obtain the new q4h dose: 150 divided by 6 = 25 mg q4h
3. Divide the newly calculated q4h dose by 2 to obtain the new breakthrough dose: 25 mg divided by 2 = 12.5 mg q1 - 2h PRN
4. If this dose provided reasonable symptom control, then order 25 mg PO q4h, with 12.5 mg PO q1 - 2h PRN. (It would also be reasonable to order 10 mg or 15 mg PO q2h for breakthrough.)

Conversion Guide

(To convert from long-acting preparations to short-acting preparations)

General principles in converting from sustained release to immediate release preparations (for the same drug):

1. Add up the total amount of opioid used in the past 24 h, including breakthrough dosing.
2. Divide this total by 6 to obtain equivalent q4h dosing.
3. Divide the q4h dose by 2 to obtain breakthrough dosing.
4. Use clinical judgment to adjust this dose up or down depending on symptom control.
5. Consider available tablet sizes when calculating doses.

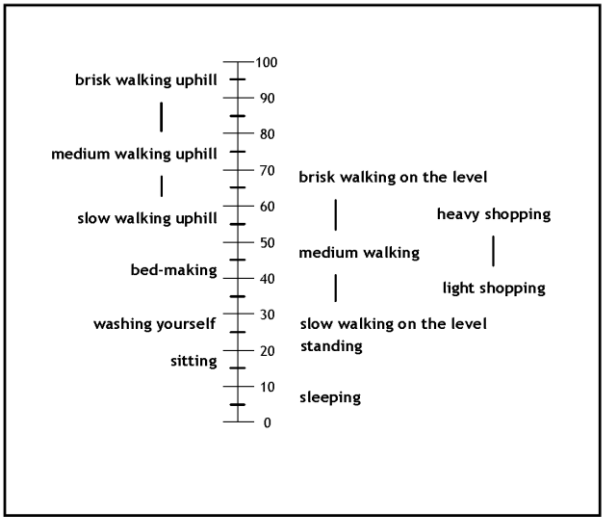
Example:

A patient is ordered a sustained release morphine preparation at a dose of 60 mg PO q12h, with 20 mg PO q4h for breakthrough, and has taken 4 breakthrough doses in 24 h.

1. Add up the amount of opioid taken in 24 h: 2 x 60 mg of sustained release morphine plus 4 x 20 mg of breakthrough is 200 mg of morphine in 24 h
2. Divide this total by 6 to obtain the equivalent q4h dosing: 200 divided by 6 is approximately 33 mg PO q4h
3. Divide this q4h dose by 2 for the breakthrough dose 33 mg divided by 2 is 16.5 mg

If the patient had reasonable symptom control with the previous regimen, then a reasonable order would be: 30 mg PO q4h and 15 mg q1 - 2h PO PRN

Oxygen-Cost Diagram



EQUIANALGESIC CONVERSION TABLE			
DRUG	**SC**	**PO**	**Ratio**
Morphine	10 mg	20 mg	
Codeine	120 mg	200 mg	12:1 (PO codeine to PO morphine)
Oxycodone	N/A	10 - 15 mg	1:2 (PO oxycodone to PO morphine)
Hydro-morphone	2 mg	4 mg	1:5 (PO hydromorphone to PO morphine)

Selected References

1) Fraser Health (2009) 'Hospice Palliative Care Program Symptom Guidelines: Dyspnea' Fraser Health Website [Internet]. Available from: http://www.fraserhealth.ca/Services/HomeandCommunityCare/HospicePalliativeCare/Documents/Dyspnea.pdf (Accessed: 23 July 2009).
2) Oncology Nursing Society (2008) 'Putting Evidence Into Practice: Evidence-Based Interventions for Cancer-Related Dyspnea' Oncology Nursing Society Website [Internet]. Available from: http://ons.metapress.com/content/c21324512r838824/.
3) Viola, R., Kiteley, C., Lloyd, N., Mackay, J. A., Wilson, J., Wong, R. and the Supportive Care Guidelines Group (2006) 'The Management of Dyspnea in Cancer Patients: A Clinical Practice Guideline' Program in Evidence Based Care Series 13-5, Cancer Care Ontario.

For full references and more information please refer to CCO's Symptom Management Guide-to-Practice: Dyspnea document.

Disclaimer:

Care has been taken by Cancer Care Ontario's Symptom Management Group in the preparation of the information contained in this pocket guide.

Nonetheless, any person seeking to apply or consult the pocket guide is expected to use independent clinical judgment and skills in the context of individual clinical circumstances or seek out the supervision of a qualified specialist clinician.

CCO makes no representation or warranties of any kind whatsoever regarding their content or use or application and disclaims any responsibility for their application or use in any way.

Notes:

Nausea & Vomiting

	Page
Assessment	**25**
Diagnosis	**25**
Non-Pharmacological treatment..	**26**
Pharmacological Treatment	**28**
Selected References	**33**

Assessment

- Comprehensive assessment includes: interview, physical assessment, nutrition assessment, medication review, medical and surgical review, psychosocial and physical environment review and appropriate diagnostics.

Diagnosis

- Nausea and vomiting is common and has multiple etiologies, several of which may be present at the same time, hence identifying the underlying causes is essential.

Non-Pharmacological Treatments

- **Providing information and education is recommended as it is fundamental to enhance the patient and family's ability to cope.**
- Consult with the inter-professional team members (e.g., social worker, spiritual practitioner, physiotherapist, occupational therapist, counselor for psychosocial care and anxiety reduction).
- Explain to the patient/family what is understood about the multiple triggers of nausea and/or vomiting and that it may take a number of strategies to make a difference

Consult with a Clinical Dietitian and have them provide dietary/nutritional advice

- Limit spicy, fatty and excessively salty or sweet foods, foods with strong odours and foods not well tolerated.
- Use small, frequent, bland meals and snacks throughout the day. Suggest small amounts of food every few hours. (Hunger can make feelings of nausea stronger).
- Hard candies, such as peppermints or lemon drops may be helpful.
- Sip water and other fluids (fruit juice, flat pop, sports drinks, broth and herbal teas such as ginger tea) and suck on ice chips, popsicles or frozen fruit. It is important to try and drink fluids throughout the day even when not feeling thirsty.

- Limit the use of caffeine, including colas and other caffeinated soft drinks, such as coffee drinks, and tea (both hot and cold).
- Reduce meal size when gastric distension is a factor.
- Ingest liquids and solids separately. It is often helpful to drink fluids after and/or in between meals.
- Consume food/liquids cold or at room temperature to decrease odours.
- Sit upright or recline with head elevated for 30-60 minutes after meals.
- If vomiting, limit all food and drink until vomiting stops; wait for 30-60 minutes after vomiting, then initiate sips of clear fluid.
- When clear fluids are tolerated, add dry starchy foods (crackers, dry toast, dry cereal, pretzels)
- When starchy foods are tolerated, increase diet to include protein rich foods (eggs, chicken, fish) and lastly incorporate dairy products into the diet.

Environmental modification (where possible)

- Eliminate strong smells and sights.
- Optimize oral hygiene, especially after episodes of vomiting. Rinse with ½ tsp baking soda, ½ tsp salt in 2 cups water.
- Try rinsing mouth before eating to remove thick oral mucus and help clean and moisten mouth.
- Wear loose clothing.
- If possible try to create a peaceful eating place with a relaxed, calm atmosphere. A well ventilated room may also be helpful.

Complementary Therapies

- Acupuncture or acupressure points.
- Visualization, hypnosis, distraction.

Pharmacological Treatments

- Selection of antiemetics should be based on the most likely etiology of nausea and vomiting and site of action of medication.
- Any unnecessary medications that may be contributing to nausea and vomiting should be discontinued.
- Constipation may be a factor contributing to nausea and vomiting and requires treatment.
- It is necessary to rule out bowel obstruction and if present, appropriate treatment should be undertaken.

Choosing an antiemetic

- Metoclopramide is recommended as the drug of first choice to control chronic nausea/vomiting in patients with advanced cancer.
- Titrate metoclopramide to maximum benefit and tolerance. If not effective add/switch to another dopamine antagonist (e.g. haloperidol).
- Domperidone may be substituted for patients who can swallow medications and who have difficulties with extrapyramidal reactions.
- Titrate antiemetics to their full dose, unless patient develops undesirable effects, before adding another drug.
- If nausea is not controlled with a specific antiemetic within 48h, add another antiemetic

from another group, but do not stop the initial agent.

- Consider combinations but monitor overlapping toxicities.
- Use regular dosing of antiemetics if experiencing constant nausea and/or vomiting.
- **For persistent nausea and/or vomiting antiemetics should be prescribed on a regular dosing schedule with a breakthrough dose available.**
- All medications need to be individually titrated to the smallest effective dose or until undesirable side effects occur.

Treatment and Management

1. Treat the cause, if possible.
2. Symptomatic management:
   - Fluid and electrolyte replacement as appropriate.
   - Nutritional advice – consider making patient NPO if obstructed or until emesis has resolved for several hours; if not obstructed, change diet as appropriate, depending on the cause of nausea.
   - Treat gastrointestinal obstruction (may need to consider interventions such as nasogastric tube (NGT), venting gastrostomy tube (PEG), stents, ostomies, possible surgical resection).
   - Pharmacological treatment of symptoms.

Pharmacological Treatment of Symptoms: Step 1

The choice of antiemetic depends on the cause and the receptors and neurotransmitters involved:

- **For delayed gastric emptying or abdominal causes (excluding bowel obstruction, see above):**
  - Metoclopramide 5-20 mg po/subcut/IV q6h (or tid AC meals plus qhs); may be used q4h if needed; 40-100 mg/24 h subcut/IV continuous infusion.
  - Alternative (if metoclopramide is not well tolerated): domperidone 10mg TID to QID (The risk of serious abnormal heart rhythms or sudden death (cardiac arrest) may be higher in patients taking domperidone at doses greater than 30mg a day or in patients who are more than 60 years old).

- **For patients treated with palliative radiotherapy:**
  - For symptoms that occur within 24 hours of administration of radiotherapy: Ondansetron 8 mg po/subcut/IV q8 – 24h; Granisetron 1 mg po q12h or 1 mg IV once daily
  - For anticipatory nausea or vomiting: lorazepam 1-2 mg po/sl/IV/subcut
  - The above agents are also best given prior to radiation for optimal effect.

- **For opioid-induced nausea:**
  - Metoclopramide 10-20 mg po/subcut/IV q6h

- Alternative: haloperidol 0.5-2.5 mg po/subcut q12h

- **For other chemical/metabolic causes:**
  - Haloperidol 0.5-2.5 mg po/subcut q12h
  - Alternative: metoclopramide 10-20 mg po/subcut/IV q6h

- **For brain metastases:**
  - Dexamethasone 4-8 mg po/subcut/IV bid (0800 and 1300 h); for brain metastases that do not respond to dexamethasone or for leptomeningeal carcinomatosis:
  - Haloperidol 1-2 mg po/subcut q12h

- **For vestibular causes:**
  - Scopolamine (transdermal patch) one or two 1.5 mg patches q72h
  - Alternate: Dimenhydrinate 25-50 mg po/ subcut/IV q4h

- **If psychogenic factors play a role:**
  - Oxazepam 10 mg po tid or lorazepam 1-2 mg po/sl/subcut/IV tid
  - Psychological techniques (particularly for chemotherapy-induced nausea and vomiting)

Pharmacological Treatment of Symptoms: Step 2

A combination of different antiemetics is required in approximately 30% of cases. Combination therapy is only beneficial if different neurotransmitters are targeted.

If the response to monotherapy is inadequate, the following combinations may be considered:

- Metoclopramide po/subcut/IV + dexamethasone po/subcut/IV.
- Haloperidol po/subcut + dexamethasone po/subcut/IV.

Pharmacological Treatment of Symptoms: Step 3

If dexamethasone combined with either metoclopramide or haloperidol yields insufficient results, the following approaches may be considered:

- Serotonin (5HT3) antagonists (ondansetron 4 - 8 mg po/subcut/IV q8-12h; granisetron 1 mg po q12h/1mg IV once daily; or dolasetron 100 mg po/IV once daily); in principle, combine with dexamethasone 4 mg po/subcut/IV once daily.
  Disadvantages of the serotonin antagonists: high costs; side effects include constipation, headaches.
- Methotrimeprazine monotherapy using a starting dose of 5 – 10 mg po q8h PRN or 6.25-12.5 mg subcut q8h PRN. Increase as needed to maximum of 25 mg per dose.
- Olanzapine monotherapy 2.5 – 5 mg po/sl/subcut once daily or bid.

Diphenhydramine may be used for the treatment of akathesias secondary to increased doses of metoclopramide.

Selected References

1) Cancer Care Nova Scotia. Guidelines for the Management of Nausea and Vomiting In Cancer Patients, Jan 2004.
2) Fraser Health. Hospice Palliative Care Program Symptom Guidelines. Fraser Health, 2006.
3) Editorial Board Palliative Care: Practice Guidelines. Nausea and vomiting. Utrecht, The Netherlands: Association of Comprehensive Cancer Centres (ACCC), National Guideline Clearinghouse, 2006.
4) Adapted with permission from the National Comprehensive Cancer Network. Clinical Practice Guidelines in Oncology Palliative Care. V.2.2011. Website: http://www.nccn.org/professionals/physician_gls/f_guidelines.asp

For full references and more information please refer to CCO's Symptom Management Guide-to-Practice: Nausea & Vomiting document.

Disclaimer:

Care has been taken by Cancer Care Ontario's Symptom Management Group in the preparation of the information contained in this pocket guide.

Nonetheless, any person seeking to apply or consult the pocket guide is expected to use independent clinical judgment and skills in the context of individual clinical circumstances or seek out the supervision of a qualified specialist clinician.

CCO makes no representation or warranties of any kind whatsoever regarding their content or use or application and disclaims any responsibility for their application or use in any way.

Notes:

Pain

	Page
Assessment	35
Non-Pharmacological Treatment	37
Pharmacological Treatment	38
Mild Pain	41
Moderate Pain	42
Severe Pain	44
Severe Pain Crisis	45
Conversion Ratios.....	46
Selected References	51

Assessment

- Prior to treatment an accurate assessment should be done to determine the cause(s), type(s) and severity of pain and its impact.
- A comprehensive assessment of pain should consider the following domains:
  - physical effects/manifestations of pain
  - functional effects (interference with activities of daily living)
  - spiritual aspects
  - psychosocial factors (level of anxiety, mood) cultural influences, fears, effects on interpersonal relationships, factors affecting pain tolerance.

- Self assessment pain scales should be used by patients with no cognitive impairment.
- Observational pain rating scales should be used in patients who cannot complete a self assessment scale.
- The frequency of the review depends upon the severity of the pain and associated distress.

General Principles of Cancer Pain Assessment

1. Perform an adequate pain history.
2. Use tools valid for the patient's age and cognitive abilities, with additional attention to the language needs of the patient (e.g., Brief Pain Inventory (BPI), Edmonton Symptom Assessment System (ESAS), Palliative Performance Scale (PPS)).
3. Record medications currently taken as well as those used in the past, including efficacy and any adverse effect.
4. Classify the pain – nociceptive, neuropathic or mixed?
5. Consider common cancer pain syndromes while conducting the history and physical examination.
6. Assess for functional impairment and the need for safety measures.
7. Incorporate a psychosocial evaluation into the assessment, including determination of the patient's/family's goals of care
8. Use a pain diary to track the effectiveness of therapies and evaluate changes in pain.

9. Review current diagnostic tests for clues to the origin of the pain. Order a diagnostic test (e.g., MRI, CT, laboratory testing) when warranted for new pain or increasing pain, and only if it will contribute to the treatment plan.
10. Evaluate for the presence of other symptoms, as pain is highly correlated with fatigue, constipation, mood disturbances, and other symptoms.
11. Assess for risk if opioids are being considered.

Non-Pharmacological Treatment

Radiation Therapy

- All patients with pain from bone metastases which is proving difficult to control by pharmacological means should be referred to a radiation oncologist for consideration of external beam radiotherapy

Vertebroplasty

- Vertebroplasty or percutaneous cementoplasty should be considered in patients with pharmacologically difficult to control bone pain from malignant vertebral collapse or pelvic metastases.

Surgery

- Removal of tumours or stabilization of bones may remove localized pain.

Anesthetic Interventions

- Interventions such as coeliac plexus block and neuraxial opioids should be considered to improve pain control and quality of life in patients with difficult to control cancer pain.

Other Therapies

- Consider role for physiotherapy or occupational therapy
- Complementary therapies (e.g. massage, aromatherapy, music therapy, acupuncture, transcutaneous electrical nerve stimulation, reflexology, Reiki, hypnotherapy) may be considered.

Psycho-social-spiritual interventions

- Psycho-social-spiritual interventions (patient education, counseling, recreational activities, relaxation therapy imagery, social interaction, spiritual counseling) should be considered.

Pharmacological Treatment

General Principles in Using Adjuvants

- The type and cause of the pain will influence the choice of adjuvant analgesic (e.g. nociceptive, neuropathic, bone metastases).
- The choice of antidepressant or anticonvulsant should be based on concomitant disease, drug therapy and drug side effects and interactions.

- Patients with neuropathic pain should be given either a tricyclic antidepressant (eg amitriptyline, desipramine, nortriptyline or imipramine) or an anticonvulsant (eg gabapentin or pregabalin) with careful monitoring for adverse effects.
- Cannabinoids may have a role in refractory pain, particularly refractory neuropathic pain.

General Principles in Using Opioids

1. Educate the patient and/or family about the use of opioids and the expected outcomes.
2. Anticipate adverse effects like sedation and educate patients about the fact that they will quickly tolerate most adverse effects except for constipation.
3. In opioid-naïve patients and the frail elderly, start low and go slow with titration. Transdermal fentanyl is **not** recommended in opioid-naïve patients.
4. In patients already on opioids, titrate them fairly quickly to the point where they are getting adequate pain control without intolerable adverse effects.
5. Immediate release or sustained release products can both be used for titration and maintenance.
6. Give opioids regularly, around the clock for constant pain, not 'as required'.
7. Always prescribe breakthrough doses.
8. Prevent adverse effects e.g., for constipation prescribe laxatives right from the initiation of therapy and decide on a plan for the management of constipation.

9. Monitor patients closely as you are titrating opioids.
10. Use universal precautions where a risk for abuse is identified.
11. Specialist pain or palliative care advice should be considered for the appropriate choice, dosage and route of opioids in patients with reduced kidney function or in patients with difficult to control pain.

- All patients with moderate to severe cancer pain, regardless of etiology, should receive a trial of opioid analgesia.
- In the presence of reduced kidney function all opioids should be used with caution and at reduced doses and/or frequency.
- Fentanyl, methadone and oxycodone are the safest opioids of choice in patients with chronic kidney disease.
- Methadone requires an experienced prescriber.
- **Check for significant drug interactions before prescribing any drug to a patient on methadone**.
- When using a transmucosal fentanyl formulation for breakthrough pain the effective dose should be found by upward titration independent of the regular opioid dose.
- For those with stabilized severe pain and on a stable opioid dose or those with swallowing difficulties or intractable nausea and vomiting, fentanyl transdermal patches may be appropriate.

Adverse Effects of Opioids

- Many opioid-naïve patients will develop nausea or vomiting when starting opioids, tolerance usually occurs within 5-10 days. Patients commencing an opioid for moderate to severe pain should have access to an antiemetic to be taken if required.
- The majority of patients taking opioids will develop constipation. Little or no tolerance develops. The commonest prophylactic treatment for preventing opioid-induced constipation is a combination of stimulant (senna or bisacodyl)and osmotic laxatives (lactulose or PEG 3350)

Patient Education should include:

- Taking routine and breakthrough analgesics, adverse effect management, non pharmacologic measures that can be used in conjunction with pharmacologic treatment.

Mild Pain ESAS 1 to 3

TREATMENT WITH NON-OPIOIDS

Acetaminophen and NSAIDS

- Acetaminophen and NSAIDS including COX-2 inhibitors should be considered at the lowest effective dose.
- The need for ongoing or long term treatment should be reviewed periodically, if no significant response in one week drugs should be stopped.

- Long term use of NSAIDs should require gastric mucosa protection.

Bisphosphonates

- There is insufficient evidence to recommend bisphosphonates for first line therapy for pain management.

TREATMENT WITH OPIOIDS

- For mild to moderate pain, weak opioids such as codeine or tramadol could be given in combination with a non-opioid analgesic.
- If pain is not controlled with these combinations go to "Moderate Pain" re: initiation and treatment with opioids

Moderate Pain ESAS 4 to 6

TREATMENT WITH OPIOIDS

- <u>If the person is opioid naïve:</u>
  - Morphine starting dose is usually 5mg Q4h with 2.5-5mg Q1H PRN for breakthrough pain. For elderly or debilitated patients consider a starting dose of 2.5mg Q4h.
  - Hydromorphone starting dose is 1mg Q4h with 0.5-1mg Q1h PRN for breakthrough pain. For elderly or debilitated patients consider a starting dose of 0.5 mg Q4h.

- Oxycodone starting dose is 2.5 mg or one half tablet Q4H with 2.5 mg or one half tablet Q2H PRN for breakthrough. (The lowest dose oxycodone tablets available, either in combination with acetaminophen or alone, contain 5mg of oxycodone, equivalent to ~5-10mg of morphine).

- If the person is taking an opioid:
  - As an immediate release preparation with q4h dosing, increase the regular and breakthrough doses by 25%.
  - As a sustained release opioid, increase this dose by 25%. Change the breakthrough dose to 10% of the regular 24h dose, either q1-2h PRN PO or q30 min PRN subcut.
  - Patients with stable pain and analgesic usage, receiving oral morphine, oxycodone or hydromorphone should have the drug converted to a sustained or controlled release formulation given q12h for ease of administration. The short acting breakthrough dose is usually 10% of the total daily dose.
  - The frequency of breakthrough doses for oral opioids is Q1-2h PRN. After conversion to a long acting preparation, if pain is not well controlled, reassess the patient and consider why multiple breakthrough doses are being used and the effectiveness of the breakthrough doses.

- If indicated after proper assessment, the daily dose can be titrated by adding 20 to 30% of the breakthrough doses used in the preceding 24 hrs to the daily sustained release formulation.
- Make frequent assessments and adjustments to the opioid dose until the pain is better controlled.

Severe Pain ESAS 7 to 10

TREATMENT WITH STRONG OPIOIDS

- **<u>If the person is opioid naïve</u>*: Oral:*** Morphine 5-10 mg PO q4h and 5mg PO q1h PRN **OR** hydromorphine 1.0-2.0 mg PO q4h and 1.0 mg PO q1h PRN **OR** ***Subcutaneous:*** Morphine 2.5 - 5 mg subcut q4h & 2.5 mg subcut q30min PRN **OR** hydromorphone 0.5 - 1.0 mg subcut q4h & 0.5 mg subcut q30min PRN.
- **<u>If the patient is taking an opioid</u>** with q4h dosing, increase the regular and breakthrough doses by 25%. Change frequency of the breakthrough to q1h PRN if PO and q30min PRN if subcut.
- If the patient is taking a sustained release opioid, increase this dose by 25%. Change the breakthrough dose to 10-15% of the regular 24h dose, either q1h PRN PO or q30 min PRN subcut.
- Titrate the dose every 24h to reflect the previous 24h total dose received
- If unmanageable opioid-limiting adverse effects are present (e.g. nausea, drowsiness,

myoclonus), consider switching to another opioid and re-titrate or consult palliative care.

- For patients with severe uncontrolled pain consider switching back to an equivalent daily dose of immediate release morphine to allow more rapid titration of dose or switch to a sc preparation/infusion.
- Meperidine and pentazocine should generally not be used in cancer patients with chronic or acute pain.
- If there is difficulty getting the pain under control consider a consultation to palliative care.

Severe Pain Crisis

1. A severe pain crisis requires prompt use of analgesics, adjuvant therapies, reassurance and a calm atmosphere.
2. **Consider a consultation to palliative care or a cancer pain specialist.**
3. If IV access is present, and the person is **opioid naïve** give stat morphine 5-10 mg IV q10min until pain is relieved; if the person is **on opioids** give the po PRN dose IV q10min until pain is relieved. Monitor carefully.
4. If no IV access available, and the person is **opioid naïve** give stat morphine 5-10 mg subcut q20-30min until pain is relieved; if the person is on opioids give the po PRN dose subcut q20-30min until pain is relieved.

5. Titrate dose by 25% every 1 - 2 doses until pain is relieved.
6. When pain is controlled: If the patient is taking a sustained release opioid increase this dose by 25% and change to q4h dosing po or subcut. **Do Not** try to manage a severe pain crisis with a long-acting opioid. Change the breakthrough dose to half of the regular dose, either q1h PRN PO or q30 min PRN subcut.

CONVERSION RATIOS

- It should be noted that these conversion ratios, based on available evidence, are conservative in the direction specified; if converting in the reverse direction, a reduction in dose of one third should be used following conversion, or specialist advice sought.

Drug	Approximate Equivalent Dose [a]	
	Parenteral	Oral
Codeine	120	200
Fentanyl	0.1-02	n/a [b]
Morphine	10	20-30 [c]
Hydromorphone	2	4-6
Oxycodone	n/a	30
Pethidine (Meperidine)	75	300
Sufentanil	0.01-0.04	n/a [b]
Tramadol	[d]	[d]
Methadone	[e]	[e]

a. From single dose studies using immediate-release dosage forms. These approximate analgesic equivalences should be used only as a guide for estimating equivalent doses when switching from one opioid to another. Additional references should be consulted to verify appropriate dosing of individual agents.
b. Route of administration not applicable.
c. With repeated dosing.
d. Tramadol's precise analgesic potency relative to morphine is not established. Consult the product monograph for dosing recommendations.
e. For methadone, see Guide-to-Practice: Pain

Conversion doses from oral morphine to transdermal fentanyl

Oral 24-hour morphine (mg/day)	Transdermal Fentanyl (mcg/h)
<90	25
90 – 134	37 (if available, otherwise 25)
135 – 189	50
190 – 224	62 (if available, otherwise 50)
225 – 314	75
315 – 404	100
405 – 494	125
495 – 584	150
585 – 674	175
675 – 764	200
765 – 854	225
855 – 944	250
945 – 1034	275
1035 – 1124	300

TITRATION GUIDE

General principles:

6. Calculate the total opioid dose taken by the patient in 24 h (regular q4h dose x 6 **PLUS** the total number of breakthrough doses given x breakthrough dose).
7. Divide this 24 h total by 6 for the equivalent q4h dose.
8. Divide the newly calculated q4h dose by 2 for the breakthrough dose.
9. Use clinical judgment regarding symptom control as to whether to round up or down the obtained result (both breakthrough and regular dosing). Remember to consider available dosage forms (in the case of PO medications especially).
10. If the patient is very symptomatic a review of how many breakthrough doses have been given in the past few hours might be more representative of his/her needs.

Example:

A patient is ordered morphine 20 mg q4h PO and 10 mg PO q2h PRN, and has taken 3 breakthrough doses in the past 24 h.

1. Add up the amount of morphine taken in the past 24 h:
   6 x 20 mg of regular dosing, plus 3 x 10 mg PRN doses equals a total of 150 mg morphine in 24 hours
2. Divide this total by 6 to obtain the new q4h dose: 150 divided by 6 = 25 mg q4h
3. Divide the newly calculated q4h dose by 2 to obtain the new breakthrough dose: 25 mg divided by 2 = 12.5 mg q1 - 2h PRN
4. If this dose provided reasonable symptom control, then order 25 mg PO q4h, with 12.5 mg PO q1 - 2h PRN. (It would also be reasonable to order 10 mg or 15 mg PO q2h for breakthrough.)

CONVERSION GUIDE

(To convert from long-acting preparations to short-acting preparations)

General principles in converting from *sustained release* to *immediate release* formulations (for the same drug):

1. Add up the total amount of opioid used in the past 24 h, including breakthrough dosing.
2. Divide this total by 6 to obtain equivalent q4h dosing.
3. Divide the q4h dose by 2 to obtain breakthrough dosing.
4. Use clinical judgment to adjust this dose up or down depending on symptom control.
5. Consider available tablet sizes when calculating doses.

Example:

A patient is ordered a long-acting morphine preparation at a dose of 60 mg PO q12h, with 20 mg PO q4h for breakthrough, and has taken 4 breakthrough doses in 24 h.

1. Add up the amount of opioid taken in 24 h: 2 x 60 mg of long-acting morphine plus 4 x 20 mg of breakthrough is 200 mg of morphine in 24 h
2. Divide this total by 6 to obtain the equivalent q4h dosing: 200 divided by 6 is approximately 33 mg PO q4h
3. Divide this q4h dose by 2 for the breakthrough dose 33 mg divided by 2 is 16.5 mg
4. If the patient had reasonable symptom control with the previous regimen, then a reasonable order would be: 30 mg PO q4h and 15 mg q1 - 2h PO PRN

Selected References:

1. Scottish Intercollegiate Guidelines Network SIGN 106, 'Control of Cancer Pain in Adults with Cancer: A National Clinical Guideline' November 2008.

For full references and more information please refer to CCO's Symptom Management Guide-to-Practice: Pain document.

Disclaimer:

Care has been taken by Cancer Care Ontario's Symptom Management Group in the preparation of the information contained in this pocket guide.

Nonetheless, any person seeking to apply or consult the guide to practice is expected to use independent clinical judgment and skills in the context of individual clinical circumstances or seek out the supervision of a qualified specialist clinician.

CCO makes no representation or warranties of any kind whatsoever regarding their content or use or application and disclaims any responsibility for their application or use in any way.

Notes:

Loss of Appetite

	Page
Definition of Terms	53
Diagnosis	56
Assessment	58
Non-Pharmacological Treatment	59
Pharmacological Treatment	62
Selected References	64

Definition of Terms

The first step in managing this symptom will be validation of Edmonton Symptom Assessment System (ESAS) score with patient. An understanding of primary cachexia and how it differs from anorexia is needed to establish whether you are dealing with anorexia, secondary cachexia or primary cachexia.

Definitions

Anorexia is the loss of appetite or the desire to eat.

Cancer Cachexia is a multifactorial syndrome characterized by an ongoing loss of skeletal muscle mass (with or without loss of fat mass) that cannot be fully reversed by conventional nutrition support and leads to progressive functional impairment. Weight loss is evident. Losses associated with cancer cachexia are in excess of that explained by anorexia

alone; however anorexia can hasten the course of cachexia.

> *Secondary Cachexia*: is characterized by potentially correctable causes that could explain the syndrome. Once identified, prompt intervention can greatly impact the patient's quality of life and overall prognosis**.**
>
> *Primary Cachexia* should only be considered when all secondary causes have been identified and treated.

Sarcopenia is a condition characterized by loss of muscle mass and muscle strength. Patients presenting with loss of muscle mass, but no weight loss, no anorexia, and no measureable systemic inflammatory response may well be sarcopenic.

Recent literature encourages the staging of primary cachexia to support patients and potentially improve the type and timing of treatment modalities (Figure 1).

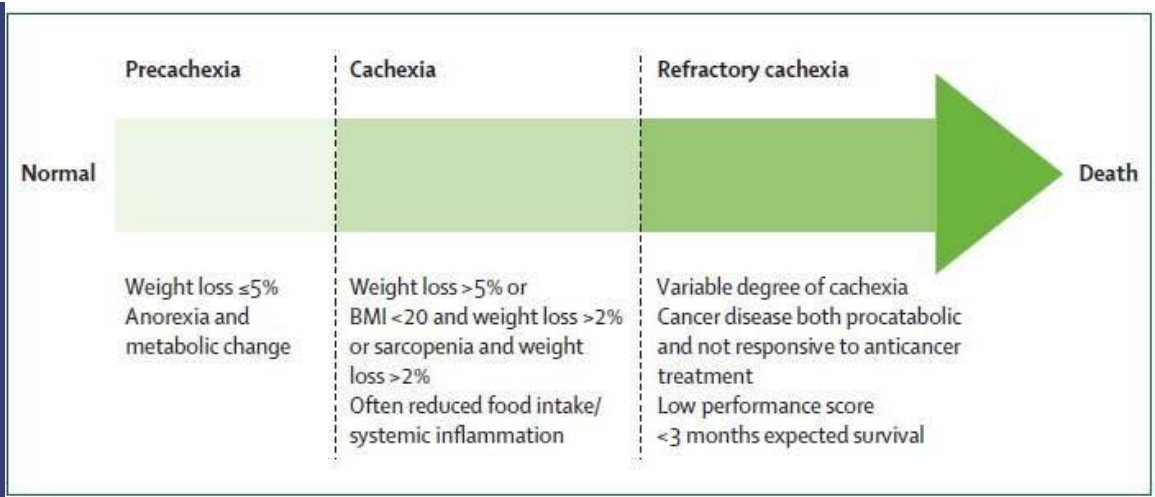


Figure 1: Stages of primary cachexia

Reprinted from The Lancet, 12, Fearon et al, Definition and classification of cancer cachexia: an international consensus, p.491 Copyright (2011), with permission from Elsevier.

Diagnosis

Establish whether loss of appetite is related to treatment side effects (e.g. radiation therapy, chemotherapy, or surgical treatment), other medication and/ or psychosocial factors. If these factors are not deemed to be causative then tumor related factors may be at work and determination of the physical vs. metabolic factors should be further considered. See table 1 for causes of anorexia and secondary cachexia.

Cause	Description	Anorexia	Secondary Cachexia
Tumour related	Factors secreted by tumour (e.g. tumour necrosis factor/cachectin, interleukin-6, lipid-mobilizing factor, proteolysis-inducing factor)	√	
	Metabolic and hormonal abnormalities (e.g. alterations in carbohydrate, lipid and protein utilization synthesis and breakdown)	√	
	Taste and smell abnormalities or food aversions	√	√
	Dysphagia		√
	Dyspnea		√
	Fatigue / malaise and asthenia (cycle can occur in which decreased intake leads to lethargy and weakness, leading to a further decrease in oral intake)	√	√
	Gut involvement (e.g. intraluminal gastrointestinal malignancy, gut atrophy, partial bowel obstruction, decreased production of digestive secretions, decreased peristalsis, constipation)	√	√
	Malabsorption Syndrome (fats and carbohydrates not metabolized/ absorbed)		√

Cause	Description	Anorexia	Secondary Cachexia
	Pain	√	√
	Infection (e.g. low grade sepsis)	√	
	Early satiety	√	
Surgical, Systemic and Radiation Treatment related	Constipation	√	√
	Diarrhea (e.g. cytotoxic effects on the gut mucosa/ radiation enteritis/ short bowel syndrome)	√	√
	Dysphagia		√
	Fatigue	√	√
	Nausea/Vomiting	√	√
	Pain	√	√
	Taste and Smell abnormalities	√	√
	Xerostomia (e.g. mucositis, infection, poor hygiene, dehydration, medication, taste bud alternation)	√	√
	Palliative gastrectomy	√	√
Commonly used Medications	Opioids	√	
	Systemic antineoplastic drugs (e.g. chemotherapy, targeted therapy, interferon)	√	
	Antimicrobial agents	√	
	Antidepressants (e.g. selective serotonin reuptake inhibitors such as fluoxetine, sertraline, escitalopram, paroxetine; atypicals such as bupropion)	√	
Psychosocial factors	Anxiety	√	√
	Depression	√	√
	Delirium		√
	Fear of eating because of possibility of making symptoms worse (e.g. pain, incontinence, diarrhea, constipation) or because of certain beliefs that eating will make the	√	

Cause	Description	Anorexia	Secondary Cachexia
	cancer, symptoms, or health worse.		
	Lack of emotional support	√	√
	Lack of functional support/independence	√	√
	Lack of financial resources/support	√	√

The **causes of primary cachexia** are also tumour-related causes of anorexia:

- factors secreted by tumour (e.g. tumour necrosis factor/cachectin, interleukin-6, lipid-mobilizing factor, proteolysis-inducing factor) , and

- metabolic and hormonal abnormalities (e.g. alterations in carbohydrate, lipid and protein utilization synthesis and breakdown).

Assessment

Ongoing comprehensive assessment is the foundation of effective anorexia and cachexia management. An in-depth assessment should include:

- review of medical history with current medication(s),
- review of treatment plan/effects and clinical goals of care,
- weight and diet history,
- physical assessment,
- available laboratory investigations, and
- review of psychosocial and physical environment.

Consider the following validated tools for further screening and in-depth assessment:

- Malnutrition Screening Tool (MST)
- Patient Generated Subjective Global Assessment (PG-SGA)
- Percentage of weight loss over time evaluates malnutrition:
    - > or equal 5% loss of usual body weight in one month.
    - > or equal 7.5% loss of usual body weight in 3 months.
    - > or equal 10% loss of usual body weight in 6 months.

Non Pharmacological Treatment

Stage of disease, progression of disease and Palliative Performance Scale (PPS), or functional status, should be considered when determining goals of care and treatment plans.

Psychosocial Strategies

- Provide emotional support to patient and family.
- Consider importance of food in the social context and impact on quality of life.
- Consider cultural issues
- Consider patient's accessibility to food.
- Referral to other health care professionals where appropriate.

Nutrition Education Strategies

Provide nutrition-focused patient education for self-management early in symptom trajectory with a goal to improve or maintain nutritional and functional status via oral nutrition.

- Suggest eating small, frequent meals and choosing high energy, high protein foods. See Patient Education tools below.
- Ensure adequate hydration, preferably through energy and protein containing liquids.
- Suggest making mealtimes as relaxing and enjoyable as possible.

- Suggest convenience foods, deli or take-out foods, Meals on Wheels® or catering services, Home Making services, or asking friends/family to help out.
- Taking medication with a high calorie / protein fluid such as milkshakes or nutrition supplements can also increase nutritional intake. This should be reviewed by a dietitian and/or pharmacist because of potential drug/nutrient interaction(s).
- Nutritional supplements, as recommended by a dietitian and/or pharmacist.
- Refer to a registered dietitian. See section below.

Patient Education tools:
- Healthy Eating Using High Energy, High Protein Foods
- High Energy and High Protein Menu items
- Food ideas to help with poor appetite
- Increasing Fluid Intake
- Suggestions for Increasing Calories and Protein
- Eating Well When You Have Cancer
- Canada's Food Guide

Exercise Strategies

- Encourage exercise, as tolerated by patient. Walking fifteen minutes a day can help regulate appetite.
- Patient should start the exercise regimen slowly, and gradually increase intensity.
- Exercise can be initiated at most levels above PPS 30-40% but caution should be guiding principle, as well as presence of bony metastases and low blood counts.

Referral to a Registered Dietitian

Individualized dietary counseling has been shown to reduce incidence of anorexia and improve nutritional intake and body weight, as well as improve quality of life.

Non-Pharmacological Treatment specific to Primary Cachexia: Refractory stage

- Consider Palliative Performance Scale (PPS) scores, in conjunction with ESAS scores, to determine appropriateness and aggressiveness of interventions.
- Assist families and caregivers to understand and accept benefits and limits of treatment interventions, and to look at alternate ways to nurture patient (oral care, massage, reading, conversing).
- While underlying cause(s) may be evident, treatment may not be indicated.
- Ice chips, small sips of beverages and good mouth care becomes norm.
- Consider symbolic connection of food and eating with survival and life. Food may become a source of emotional distress experienced by both family and patient.
- It is important to educate that a person may naturally stop eating and drinking as part of illness progression and dying process.
- Focus should be on patient comfort and reducing patient and caregiver anxiety, as reversal of refractory cachexia is unlikely.
- Recognize that discontinuation of nutrition is a value-laden issue. Consider consultation with

registered dietitian, spiritual counselor or bioethicist, to clarify clinical goals.

- Referral to other health care professionals where appropriate.

Pharmacological Treatment

The following pharmacological treatments are suggested to alleviate the symptom of loss of appetite and may improve quality of life. They may affect weight gain; however weight gain may be attributable to water retention and/or fat, not muscle gain.

- Appetite stimulants can be used in combination with or after failure of oral nutritional management.
- Use of appetite stimulants is particularly warranted in patients with incurable disease. Appetite stimulants can be administered to patients with any type of tumour.
- The optimal mode of administration for these products is not known.

Please refer to the drug table on next page.

Drug Class	Indication	Dosing	Side effects
Corticosteroids	May increase appetite, strength and promote a sense of well-being; effects last about 2-4 wks.	Initial dose : dexamethasone 4mg daily OR prednisolone 30mg daily in the morning. Prescribe for 1 week, if no benefit, stop. If helpful, increase or decrease to most effective dose; review regularly and withdraw if no longer improving symptoms. Other Considerations: Assess need for a proton pump inhibitor (i.e. pantoprazole, rabeprazole)	-peripheral edema; -candidiasis; -gastric irritation; -hyperglycaemia; -insomnia; -catabolic effect in reducing muscle mass and function.
Prokinetics	May be useful when chronic nausea occurs in association with cachexia because of autonomic failure with resulting gastroparesis.	metoclopramide 10 mg q4 to 8h. (higher doses can cause extrapyramidal symptoms) OR domperidone 10mg TID to QID (The risk of serious abnormal heart rhythms or cardiac arrest may be higher in patients taking domperidone at doses greater than 30mg a day or in patients who are more than 60 years).	- restlessness; - drowsiness; - extrapyramidal symptoms; - diarrhea; - weakness.
Synthetic Progestogens	May be useful in treating anorexia, improving appetite and increasing weight.	megestrol acetate: minimum efficacious dose = 160 mg daily and titrate to effect maximum dose = 480 mg/ day OR medroxyprogesterone acetate (MPA): 200 mg daily	-edema; -venous thromboembolic events; -hypertension

Selected References:

1. BC Cancer Agency. Nutritional Guidelines for Symptom Management: Anorexia [Internet]. 1996, updated 2005. [cited 21/12/2010] Available from: http://www.bccancer.bc.ca/HPI/NutritionalCare/SMG/default.htm
2. Desport JC, Gory-Delabaere G, Blanc-Vincent MP, Bachmann P, Be´ al J, Benamouzig R, Colomb V, Kere D, Melchior JC, Nitenberg G, Raynard B, Schneider S, and Senesse P. FNCLCC Standards, Options and Recommendations for the use of appetite stimulants in oncology. *British Journal of Cancer*; 2000:89(Suppl 1):S98 – S100, doi:10.1038/sj.bjc.6601090.
3. Fraser Health Hospice Palliative Care Program. Symptom Guidelines: Nutrition and cachexia [Internet]. 2006. [cited 21/12/2010] Available from: http://www.fraserhealth.ca/media/15FHSymptomGuidelinesNutritionCachexia.pdf
4. Fearon K, Strasser F, Anker S, Bosaeus I, Bruera E, Fainsinger RL, Jatoi A, Loprinzi C, Macdonald N, Mantovani G, Davis M, Muscaritoli M, Ottery F, Radbruch P, Walsh D, Wilcock A, Kaasa S, & Baracos V. Definition and classification of cancer cachexia: an international consensus . *The Lancet*; 2011; 12: 489-495.

For full references, links to tools, and more information please refer to CCO's Symptom Management Guide-to-Practice: Loss of Appetite document (www.cancercare.on.ca/symptools).

Notes:

Bowel Care

Page

Assessment 67
Diagnosis 68
Non-Pharmacological Treatment... 68
Pharmacological Treatment 72
Selected References 79

Assessment

- Obtaining a detailed history, including assessment of functional status and goals of care, is an important step in identifying etiologic factors and appropriate management strategies for constipation and diarrhea.
- Physical assessment should include vital signs, functional ability, hydration status, cognitive status, abdominal exam, rectal exam and neurological exam if a spinal cord or cauda equine lesion is suspected. Consider abdominal x-rays if bowel obstruction or severe stool loading of the colon is suspected.

Diagnosis

- Identifying the etiology of constipation and diarrhea is essential in determining the interventions required.

Non-Pharmacological Interventions

Constipation

Consider performance status, fluid intake, diet, physical activity and lifestyle when managing constipation.

General Education

- It is not necessary to have a bowel movement every day. As long as stools are soft and easy to pass, every two days is generally adequate.
- Avoid excessive straining.
- In absence of oral intake, the body continues to produce 1-2 ounces of stool per day.

PPS Stable, Transitional and End of Life (30-100%)

Fluid Intake

- Encourage intake of fluids throughout the day.
- Aim for fluid intake between 1500-2000 ml/day.
- For patients who are not able to drink large volumes, encourage sips throughout the day.
- Limit intake of caffeinated and alcoholic beverages, as they may promote dehydration

Physical Activity

- Physical activity should be tailored to the individual's physical ability, health condition and personal preference, to optimize adherence.
- Frequency, intensity and duration of exercise should be based on the patient's tolerance.
- For PPS 60% and above, walking is recommended (e.g., 15-20 minutes once or twice per day or 30-60 minutes daily, 3-5 times per week).
- For PPS 30-50% exercises such as low trunk rotation and single leg lifts, for up to 15 to 20 minutes per day, are encouraged, if able.

Personal Considerations

- Provide privacy during toileting.
- Attempts at defecating should be made 30 to 60 minutes following ingestion of a meal, to take advantage of the gastro-colic reflex.

PPS Stable and Transitional (40-100%)

Diet

- The following dietary recommendations are not applicable if bowel narrowing or obstruction is suspected.
- Dietary fibre intake should be gradually increased once the patient has a consistent fluid intake of at least 1500 ml per 24 hours.
- Aim for dietary fibre intake of at least 25 grams per day (choose 7-10 servings per day of whole fruits and vegetables, instead of juices, choose 6-8 servings of grain

products per day, 100% whole grain breads and high fibre cereals, plant proteins daily as part of the 2-3 servings of meats and alternatives).
- Fruit laxative (125 ml pitted dates, 310 ml prune nectar, 125 ml figs, 200 ml raisins,125 ml pitted prunes).
- Consult with a dietitian for specific nutritional advice regarding fibre intake.

Personal Considerations
- Walking to the toilet, if possible, is recommended. If walking is difficult, use a bedside commode.
- Assuming the squat position on the toilet can facilitate the defecation process.
    - Sitting with feet on a stool may help with defecation.

PPS End of Life (10-30%)
- Raising the head of the bed may facilitate the defecation process.
- Simulate the squat position by placing the patient in the left-lateral decubitus position, bending the knees and moving the legs toward the abdomen.

PPS End of Life (10-20%)
- For patients with PPS 10-20%, consider the burdens and benefits of regular bowel care, using good clinical judgment when making recommendations.

Diarrhea

Consider performance status, diet, fluid intake, quality of life and lifestyle when managing diarrhea.

PPS Stable, Transitional and End of Life (30-100%)

Diet

- Eat small frequent meals.
- Limit consumption of caffeine, fried, greasy foods and foods high in lactose.
- Avoid sorbitol containing foods (e.g., sugar-free gum and sugar-free candy).
- Limit/avoid foods high in insoluble fiber (e.g., wheat bran, fruit skins and root vegetable skins, nuts and seeds, dark leafy greens and legumes such as dried peas).
- Include foods high in soluble fibre (barley, potatoes, bananas and applesauce).
- Avoid hyper-osmotic liquids (fruit drinks and sodas). Dilute fruit juices with water.

Fluid Intake

- Parenteral hydration may be required for severe diarrhea
- Provide fluids orally, if dehydration is not severe.
- An oral rehydration solution can be prepared by mixing 1/2 teaspoon salt and 6 level teaspoons sugar in 1 litre of tap water.
- Commercially available oral rehydration solutions containing appropriate amounts of sodium, potassium and glucose can be used.

PPS Stable, Transitional and End of Life (10-100%)

Quality of Life

- Persistent diarrhea can have severe effects on image, mood and relationships.
- Attention must be paid to understanding the emotional impact from the patient's perspective.

- Offer practical strategies to assist with coping:
  carefully plan all outings, carry a change of clothes, know the location of restrooms, use absorbent undergarments.

Life style

- Take steps to prevent skin excoriation:
  - Use mild soap, consider sitz bath.
  - Apply a skin barrier product.
- Hydrocolloid dressings may be used as a physical barrier to protect excoriated skin.

PPS End of Life (10-20%)
Exercise good clinical judgment regarding the burden and benefits of parenteral fluids for the individual patient

Pharmacological Treatments

- Ask patient whether using non-traditional or alternative therapies for bowel management.
- Consider the etiology of constipation or diarrhea before initiating any pharmacological treatment.

Constipation

Consider the patient's preferences and previous experiences with bowel management when determining a bowel regimen.

Consider the patient's recent bowel function and response to previous treatments to guide appropriate selection and sequence of pharmacological treatments.

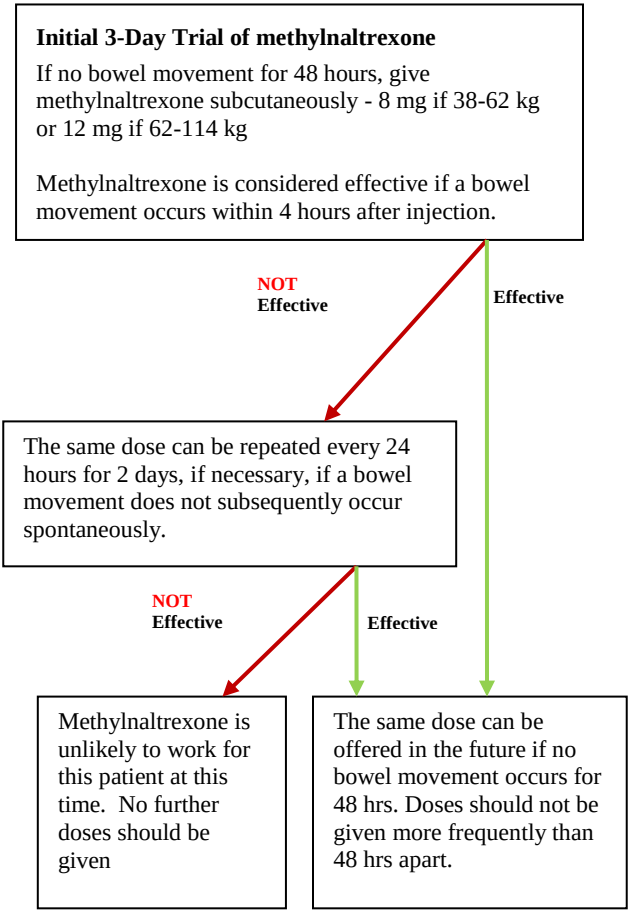
Recommended first line agents
• Oral colonic stimulant (sennosides or bisacodyl) and/or • Oral colonic osmotic (lactulose or polyethylene glycol)
Recommended second line agents
• Suppositories (glycerin or bisacodyl) or • Enemas (phosphate enema)
Recommended third line (rescue) agents
• Picosulfate sodium-magnesium oxide-citric acid or • Methylnaltrexone (if the patient is taking regular opioids)

Fecal Impaction

- If stool is impacted in the rectum, use a glycerin suppository to soften the stool, followed 1 hour later by digital disimpaction, if necessary (after pretreatment with analgesic and sedative), and/or a phosphate enema.
- If stool is higher in the left colon, use an oil retention enema, followed by a large volume enema at least 1 hour later.

Constipation Management in Special Circumstances

Opioid-induced constipation is much easier to prevent than to treat. Start a first line oral laxative on a regular basis for all patients taking opioids.


Initial 3-Day Trial of methylnaltrexone
If no bowel movement for 48 hours, give methylnaltrexone subcutaneously - 8 mg if 38-62 kg or 12 mg if 62-114 kg
Methylnaltrexone is considered effective if a bowel movement occurs within 4 hours after injection.
NOT Effective
Effective
The same dose can be repeated every 24 hours for 2 days, if necessary, if a bowel movement does not subsequently occur spontaneously.
NOT Effective
Effective
Methylnaltrexone is unlikely to work for this patient at this time. No further doses should be given
The same dose can be offered in the future if no bowel movement occurs for 48 hrs. Doses should not be given more frequently than 48 hrs apart.

Patients with a Colostomy

- Use the same approach to bowel care as for the patient without a colostomy.
  A patient with a very proximal colostomy may not benefit from colonic laxatives.
- There is no role for suppositories since they cannot be retained in a colostomy.
- Enemas may be useful for patients with a descending or sigmoid colostomy.

Paraplegic Patients

- A patient with paraplegia is unable to voluntarily evacuate the rectum.
- Passage of stool spontaneously may represent overflow only.
- As for patients without paraplegia, oral laxatives may be needed to move stool to the rectum, but the paraplegic patient needs help to empty the rectum.
  - Schedule a rectal exam daily or every 2 days, depending on the patient's preference, followed, if necessary, by assistance emptying the rectum using one or more of the following:
    - suppository
    - enema
    - digital emptying
- Develop an effective, regular protocol that is acceptable to the patient.

Table 1 and 2 below offer additional information on oral and rectal laxatives available in Canada.

Table 1. Oral Laxatives

Oral	Type	Formulations	Doses	Latency
Bisacodyl	Colonic stimulant	5 mg tablet	5-15 mg qhs; increase up to 15 mg tid	6-12 hours
Lactulose	Colonic osmotic, predominantly softening, secondarily stimulant	667 mg/ml syrup	15 ml daily to 60 ml tid	1-3 days
Picosulfate sodium-magnesium oxide-citric acid	Colonic stimulant and osmotic	10 mg - 3.5 gm - 12 gm in each sachet	1 sachet in 250 ml water 1-2 times daily until good effect	3-6 hours or less
Polyethylene glycol (PEG)	Colonic osmotic, predominantly softening, secondarily stimulant	PEG 3350; PEG with electrolytes	17-34 gm powder in 125-250 ml non-carbonated fluid 1-3 times daily	1-3 days
Sennosides	Colonic stimulant	8.6 mg tablet; 1.7 mg/ml syrup	1-4 tablets or 5-20 ml qhs; increase up to 4 tablets or 20 ml bid	6-12 hours

Notes: bid = twice daily; gm = grams; mg = milligrams; ml = milliliter; qhs = every night at bedtime; tid = three times a day.

Table 2. Rectal Laxatives

Rectal or Stomal	Type	Formulations	Doses	Latency
Bisacodyl suppository	Peristalsis stimulating	5, 10 mg	10 mg every 3 days prn	15-60 minutes
Glycerin suppository	Osmotic - predominantly softening	Adult suppository Pediatric suppository	One daily prn	15-60 minutes
Large volume enema (tap water or saline)	Colonic dilation and stimulation; lubrication	Tap water Normal saline solution	750-1000 ml	10-15 minutes
Oil retention enema	Softening and lubricating	Mineral oil	150-200 ml	30-60 minutes
Phosphate enema	Osmotic and peristalsis stimulating	Sodium and potassium phosphate solution in pre-packed bottles	Every 3 days prn	15-60 minutes

Notes: mg = milligrams; ml = milliliters; prn = as required;

Diarrhea

A single liquid or loose stool usually does not require intervention.

A single drug should be used for diarrhea and care should be taken to avoid sub-therapeutic doses.

- Loperamide (2 mg tablets; 2 mg/15 ml solution) is the preferred first-line anti-diarrheal agent:

- Initially, use 2 mg orally after each loose bowel movement, up to 16 mg per day.
- For chronic diarrhea, a regular bid dose can be used, based on the 24-hour dose found to be effective, plus 2 mg after each loose bowel movement, up to 32 mg per day total.

OR

- Diphenoxylate/atropine (2.5/0.025 mg tablets)
  - 1-2 tablets orally as needed, up to 4 times per day (maximum 20 mg diphenoxylate per day)
  - Titrate dose down once diarrhea control achieved, to determine the maintenance dose.

- Opioids – consider if the patient is not currently on an opioid for other indications.
- Metronidazole 500 mg orally tid for 2 weeks for Clostridium difficile diarrhea.
- Octreotide 50-600 mcg per day subcutaneously (dosed bid or tid) can be considered for severe, refractory diarrhea.In cases of severe diarrhea, parenteral rehydration may be required.
- If the perianal skin is already inflamed or excoriated, use a topical corticosteroid cream for 1 to 2 days.

Selected References:

1) Fraser Health. Hospice palliative care program symptom guidelines: Bowel Care [Internet]. Surrey, BC: Fraser Health Website; 2006. Website: http://www.fraserhealth.ca/media/04FHSymptomGuidelinesBowelCare.pdf

2) Oncology Nursing Society. Putting Evidence Into Practice: Evidence-Based Interventions to Prevent, Manage, and Treat Chemotherapy- and Radiotherapy-Induced Diarrhea. Clinical Journal of Oncology Nursing 2009;13(3):336-341. Link to ONS PEP Diarrhea Quick View Resource: http://www.ons.org/Research/PEP/Diarrhea.

3) Registered Nurses' Association of Ontario. Prevention of Constipation in the Older Adult Population. (Revised). Toronto, Canada: Registered Nurses' Association of Ontario; 2005. Website: http://www.rnao.org/Page.asp?PageID=924&ContentID=809

4) National Comprehensive Cancer Network. Clinical Practice Guidelines in Oncology Palliative Care. V.2.2011. Website: http://www.nccn.org/professionals/physician_gls/f_guidelines.asp

For full references and more information please refer to CCO's Symptom Management Guide-to-Practice document.

Notes:

Oral Care

Assessment **82**

Diagnosis **82**

General Oral Care
Non-Pharmacological Interventions..... **82**
Pharmacological Interventions **84**

Oral Mucositis Prevention
Non-Pharmacological Interventions..... **85**
Pharmacological Interventions..... **86**

Oral Mucositis Management
Non-Pharmacological Interventions..... **86**
Pharmacological Interventions..... **87**

Xerostomia Prevention
Non-Pharmacological Interventions..... **87**
Pharmacological Interventions..... **87**

Xerostomia Management
Non-Pharmacological Interventions..... **87**
Pharmacological Interventions..... **88**

Dysgeusia Prevention
Non-Pharmacological Interventions..... **89**
Pharmacological Interventions..... **89**

Dysgeusia Management
Non-Pharmacological Interventions..... **89**
Pharmacological Interventions..... **90**

Intra-Oral Infections Prevention
Non-Pharmacological Interventions..... **90**
Pharmacological Interventions..... **90**

Intra-Oral Infections Management
Non-Pharmacological Interventions..... **91**
Pharmacological Interventions..... **91**

Selected References **94**

Assessment

- Common symptoms to screen for include oral pain, dry mouth, taste changes and difficulty with opening/closing of the mouth.
- Common signs to screen for include cavities, bleeding, infections, ulcerations and abnormal lesions.

Diagnosis

- Significant risk factors for the development of oral complications include the type of cancer, type of cancer treatments, cumulative doses of chemotherapy or radiation treatment, method of delivery and duration of treatment.
- Predisposing medical, dental, and lifestyle factors may increase the severity of the complications.
- Oral complications can significantly affect the patient's morbidity, ability to tolerate treatment, and overall quality of life.
- Rigorous assessment, diagnosis and early intervention are important in preventing and decreasing oral complications.

General Oral Care

Non-Pharmacological Interventions

Principles of Oral Care

- Good oral care is fundamental in preventing and decreasing oral complications and has the potential to modify the acute and long term sequelae of therapy.
- The major purposes of oral care are to maintain normal function of the oral tissues, to maintain comfort, and to reduce the risk of bleeding, local infection and systemic infection.

- A uniform systematic education plan for oral care is recommended to help patients understand and cope with symptoms of oral complications.
- An important component of oral care management is the assessment of nutritional status, including adequacy of oral solid and fluid intake.
- It is important to keep oral mucosa and lips, clean, soft, moist and intact thus preventing infection.
- Good dental care is encouraged.
- The recommended rinsing solution is a bland rinse (1 teaspoon salt, 1 teaspoon baking soda in 1 liter/ 4 cups of water). The rinse should be prepared at least once daily and should not be refrigerated.
- Following emesis, patients should be instructed to rinse mouth with the bland rinse to neutralize the mouth immediately, minimizing tooth enamel demineralization.
- Patients may chew xylitol gum or suck on xylitol lozenges up to 6 grams a day.
- While there is no evidence to recommend either for or against the use of club soda, the Oral Care SMG working group suggests it should be avoided due to the acidic pH, a result of the carbonic acid content found in carbonated soft drinks.
- Factors to consider for oral care at the end of life;
    - Discussions with patients/families should be done early and as often as necessary to explain the etiology of mouth complications, determine the goals of care, clarify the declining health status and determine desired levels of care pertaining to nutrition, hydration and interventions.
    - As patients approach the end of life, the objective of oral care is to avoid complications, treat potentially reversible conditions rapidly and/or provide relief of

symptoms caused by the offending oral complication.
    - Oral candidiasis is common in this patient population and therefore the oral cavity should be evaluated daily.

Pharmacological Intervention

Analgesics

- With continuous pain (e.g., moderate to severe oral mucositis) consider an oral analgesic prescribed **regularly** to allow for more thorough tooth brushing.
- When appropriate, oral opioid analgesics are preferably given 60 minutes before brushing.
- Topical anesthetics (e.g., viscous lidocaine 2% or viscous xylocaine 2%, 2-5 ml) may be applied 10 minutes before eating to provide enough comfort for the person to be able to eat or drink. As an alternative use an oral analgesic 1 hour prior to eating.
- For cognitively intact head and neck cancer patients receiving radiation therapy, 2 to 5 ml of viscous lidocaine 2% may be swallowed, up to a maximum of 6 times per day, to allow for adequate hydration, nutrition and oral care. This advisement would be at the discretion and recommendation of the patient's most responsible physician.
- If topical anesthetics are used only for rinsing, without swallowing, then the recommended maximum dose of viscous lidocaine 2% is 60 ml per day.
- If patient is allergic to lidocaine, dyclonine 0.5 to 1% may be used (5 ml q6-8 hours, swish and swallow as needed).

Medications for Excessive Secretions

- For excessive salivary secretions, tricyclic antidepressants (e.g., nortriptyline) are a consideration, starting at a low dose and titrating to effect.

- Another possibility is scopolamine transdermal 1.5 mg patch changed every 72 hours.
- At end of life, decreased cognitive ability, extreme fatigue and weakness may contribute to patient's inability to clear secretions from nose, mouth or throat.
    - Anticholinergic medications are often useful for managing excessive secretions at end of life.
    - Atropine 1% ophthalmic solution administered sublingually, 1-2 drops (1 drop ~0.5 mg) q4h prn.
    - Ipratropium 0.03% Nasal Spray administered intranasally or sublingually, 2 sprays at bedtime.
    - Scopolamine 0.2 to 0.8 mg subcut q2-4h prn.
    - Glycopyrrolate 0.2 to 0.6 mg subcut q2-4h prn.
    - Buscopan (hyoscine butylbromide) 10 mg subcut q4h prn.
    - Glycopyrrolate is less sedating than scopolamine.

Oral Mucositis - Prevention

Non-Pharmacological Interventions

- There is some evidence for the use of ice chips for the prevention of oral mucositis.
- IMRT is currently the treatment of choice for head and neck patients to minimize intra-oral complications.
- There is some evidence that Low Level Laser Therapy may reduce the incidence of oral mucositis and its associated pain, in patients receiving high-dose chemotherapy or chemo-radiotherapy before Hematopoietic Stem Cell Transplant (HSCT).
- To prevent nutritional deficiencies a multivitamin may be considered.

Pharmacological Interventions

- A systematic approach to oral care should be followed to reduce the amount of microbial flora, reduce pain and bleeding, prevent infection and reduce the risk of dental complications.
- There is no evidence of benefit for the use of chlorhexidine for the prevention of oral mucositis when compared with placebo or no treatment.

Oral Mucositis - Management

Non-Pharmacological Interventions

Nutritional Care

- Choose texture as tolerated and modify as required.
- May need to start with soft, moist, smooth foods; if not tolerated try extra soft/pureed foods.
- If only liquids are tolerated, choose high calorie, high protein fluids every 2 hours.
- Choose foods high in calories and protein, 6-8 small meals/snacks daily.
- Cook solid foods until tender, use moist sauces, choose soft, bland foods.
- Avoid foods that irritate the mouth or throat.
- Avoid eating foods which are abrasive, rough, tart, salty, spicy, acidic, very hot or very cold.
- Oral commercial nutritional supplements may be necessary.
- There is insufficient evidence to support the use of vitamin B12, beta-carotene calcium, chamomile, glutamine, or curcumin in the treatment of oral mucositis.
- If oral intake is inadequate for a prolonged period consider using a regular strength multivitamin.
- Severe oral mucositis during cancer treatment (grade 3 or 4) may be managed with an

appropriately placed feeding tube or total parenteral nutrition (TPN) depending on the patient's goals of care.

- The type of tube (i.e., gastrostomy or jejunostomy) and the method of placement (i.e., surgical or radiological) should be determined by the degree and extent of mucositis and the potential worsening of symptom due to planned cancer treatment.
- Consult dietitian if possible.

Pharmacological Interventions

- Systemic analgesia with morphine (or other strong opioid) is the recommended treatment of choice for oral mucositis pain in patients undergoing HSCT.

Xerostomia - Prevention

Non-Pharmacological Interventions

- The use of parotid sparing Intensity Modulated Radiation Therapy (IMRT) is recommended for prevention of salivary gland hypofunction and xerostomia in head and neck cancer patients.

Pharmacological Interventions

- None.

Xerostomia – Management

Non-Pharmacological Interventions

Nutritional Care

- Add extra moisture to foods, increase fluid consumption.
- Oral rinses may improve swallowing/taste problems.
- Soft, mild tasting food is often better tolerated.

- Moisten food by adding sauces, gravy, butter, dressings, broth or another liquid.
- Food and drinks should be cold or tepid.
- Plain ice cubes, sugar-free popsicles, sugar-free gum, frequent sips of cold water or mouth sprays may increase fluid consumption and help cool and moisten mouth.
- Avoid foods, fluids and other items which may dry or irritate mouth and teeth, including highly acidic foods and fluids, foods high in sugar, caffeine and alcohol.
- To stimulate residual salivary secretion and to ameliorate the condition of the mucosa, regular use of fresh, lightly acidic fruits, slices of cold cucumber and tomato or thin slices of cold apples can be used as long as patient is not experiencing mucositis.
- The use of milk, jello, sherbet, applesauce and ice cream is also suggested.

Acupuncture

- Acupuncture treatment is a possible intervention for the treatment of radiation-induced xerostomia in patients with a residual functional capacity of the salivary glands and is a treatment modality without serious adverse effects.

Artificial saliva

- Artificial saliva products may also be considered for a brief course to determine effectiveness and patient acceptability, followed by continuing therapy when warranted.

Pharmacological Interventions

- Oral pilocarpine (sialogogue) 5mg tid following radiation therapy is recommended in head and

neck cancer patients for improvement of xerostomia.
- Results for the use of pilocarpine HCl concomitantly with radiation therapy to reduce xerostomia and salivary gland hypofunction are inconsistent, however in some patients a beneficial effect has been shown on xerostomia.

Amifostine
- No consensus could be reached regarding a recommendation as most clinical studies do not have the statistical power to evaluate the influence of amifostine on the therapeutic index.

Dysgeusia – Prevention

Non-Pharmacological Interventions
- Excluding the tip of the tongue during radiation therapy may prevent dysgeusia. In one trial patients who had the tip of the tongue included in the radiation treatment field, reported marked increases in mean threshold values to the four taste qualities being tested (salt, sweet, sour, and bitter).

Pharmacological Interventions
- Zinc gluconate is not recommended for the prevention of dysgeusia in head and neck cancer patients.
- Amifostine is not recommended for the prevention of dysgeusia in head and neck cancer patients.

Dysgeusia – Management

Non-Pharmacological Interventions
Nutritional Care
- As taste changes are unique to each person and can vary over time, an individualized approach

needs to be taken to identify tolerable foods. Ongoing follow up is recommended.

- To prevent compromised food intake, patients may need encouragement and support to try foods again that may have resulted in food aversions secondary to taste changes.
- Encourage patients to:
  - Enjoy foods that taste good.
  - Experiment with food flavours to enhance taste.
  - Drink plenty of fluids.
  - Avoid strong smells.
- Nutritional counseling is recommended.

Pharmacological Interventions

- None

Intra-Oral Infections – Prevention

Non-Pharmacological Interventions

- The best prevention for any intra-oral infections is non-pharmacological in nature.
- It is necessary to follow meticulous oral care plans (See Table 5 in Oral Care Guide).

Pharmacological Interventions

- Fluconazole is found to be very effective in the prevention of clinical oral fungal infections and in reducing oral fungal colonization in patients receiving cancer therapy.
- Prophylactic fluconazole 100 mg po daily (400 mg po daily for HSCT patients) may be considered for prevention of oral candidiasis in cancer patients.

Intra-Oral Infections – Management

Non-Pharmacological Interventions

- None

Pharmacological Interventions

Topical agents are considered preferable to systemic agents for the management of **mild** intra-oral fungal infection due to the lower risk of side effects and drug interactions (e.g., sugarless nystatin rinse).

- Clotrimazole lozenges or sugarless nystatin suspension may be used as first-line therapy for the management of mild oropharyngeal candidiasis.
- Sugarless nystatin suspension 100,000 units/ml may be used as follows: Swish around and hold in the mouth for at least one minute, then swallow; use 5 ml qid for 7-14 days (works by direct contact).
- Soak dentures overnight in sugarless nystatin 100,000 units/ml solution or use sugarless nystatin 100,000 units/ml cream to treat dentures.
- Use sugarless nystatin popsicles (for cooling relief).
- Clotrimazole oral suspension (1mg/ml) may be used as follows: Swish around the mouth for one minute and then swallow; use 10 mL qid.

If topical agents are not well tolerated or the response rate is poor, then it is advised to proceed with the use of **systemic agents**.

- The management of moderate to severe oropharyngeal candidiasis, fluconazole 100 mg daily as first-line therapy is equal or more effective against oropharyngeal candidiasis in cancer patients than nystatin or clotrimazole.
- To prevent relapse after initial treatment, maintenance therapy using fluconazole 50 mg (up to 400 mg) daily may be considered.

- For fluconazole refractory disease, itraconazole or posaconazole are recommended, with voriconazole and amphotericin B reserved for refractory cases.
- Patients who cannot tolerate fluconazole (or other antifungals) may use sugarless nystatin suspension.
- Additional systemic agents include the lipid formulations of amphotericin B, and the echinocandins (caspofungin, anidulafungin, and micafungin).
- Use of these systemic agents may be limited by their side effects, especially for amphotericin B.
- These agents are optimally used for short durations of treatment.

Bacterial Infections

First line: amoxicillin 500 mg po q8h for 7-10 days
Alternative: penicillin V 300-600 mg po q6h for 7-10 days
Alternative: clindamycin 300-450 mg po q6h for 7-10 days

- Amoxicillin/ clavulanic acid (Clavulin®): 500 mg tablet (contains amoxicillin 500 mg and clavulanic acid 125 mg) po q8h OR the 875 mg tablet (contains amoxicillin 875 mg and clavulanic acid 125 mg) po q12h for 7-10 days.

If one is certain that the infection is periodontal in origin then the recommendation for first line therapy is metronidazole 500 mg po q8h for 7-10 days.

Viral infections

Herpes simplex

- Topical acyclovir: apply to affected area q3-4 hours, for a total of 6 times/day for 7 days (apply a sufficient quantity to adequately cover all lesions).
- Systemic acyclovir for larger lesions:
  - Primary Herpes Simplex Virus (HSV): acyclovir 200 mg po q4 hours, 5 times/day for 10 days or 400 mg po tid for 7-10 days (in

immunocompromised patients, consider 400 mg po q4hours, 5 times/day for 10 days).
    - Recurrent HSV: acyclovir 200 mg po q4 hours, 5 times/day for 5 days; Valacyclovir 500 mg po bid (twice daily) or q12h for 3 days. Adjust for renal dysfunction.

Varicella-zoster

- Acyclovir 400 mg po 5 times/day for 7-10 days.
- For severe infection, acyclovir 5 mg (base) per kg body weight IV (over at least 1 hour) q8 hours for 5-7 days.
- Patients with acute or chronic renal impairment may require dose reduction (e.g., acyclovir 200 mg po q12 hours when CrCl is 0-10 mL/min).
- Valacyclovir 1000 mg po tid for 7 days (superior to acyclovir for post-herpetic infections).

Cytomegalovirus

- Ganciclovir: *induction:* 5mg/kg IV over 1 hour q12h, *maintenance:* 5 mg/kg IV over one hour once per day
- Dose reductions are recommended for renal impairment.
- Ganciclovir should not be administered in patients with severe neutropenia (ANC less than 500/μL) or severe thrombocytopenia (platelets less than 25,000/μL) or severe anemia (hemoglobin less than 80 g/L).

Selected References:

1. Broadfield L, Hamilton J., Best Practice Guidelines for the Management of Oral Complications from Cancer Therapy. Supportive Care Cancer Site Team, Cancer Care Nova Scotia; 2006.
2. Harris DJ, Eilers J, Harriman A, Cashavelly BJ, Maxwell C. Putting Evidence into Practice: Evidence-based interventions for the management of oral mucositis. Clinical Journal of Oncology Nursing. 2008; 12(1):141-152.
3. BC Cancer Agency. Professional Practice Nursing Standards: Symptom Management Guidelines: Oral Mucositis. [Internet]. 2010.
4. BC Cancer Agency. Professional Practice Nursing Standards: Symptom Management Guidelines: Xerostomia. [Internet]. 2010.
5. HealthPartners Dental Group and Clinics. Oral cancer guideline. [Internet]. 2007.
6. Keefe DM, Schubert MN, Elting LS, Sonis ST, Epstein JB, Raber-Durlacher JE, et al. Updated Clinical Practice Guidelines for the Prevention and Treatment of Mucositis. Cancer 2007;109:820–31.
7. Worthington HV, Clarkson JE, Bryan G, Furness S, Glenny AM, Littlewood et al. Interventions for preventing oral mucositis for patients with cancer receiving treatment. Cochrane Database Systematic Review. 2011; Issue 4.
8. Clarkson JE, Worthington HV, Furness S, McCabe M, Khalid T, Meyer S. Interventions for treating oral mucositis for patients with cancer receiving treatment. Cochrane Database Systematic Review. 2010 Issue 10.
9. Jensen SB, Pedersen AML, Vissink A, Andersen E, Brown CG, Davies AN, et al. A systematic review of salivary gland hypofunction and xerostomia induced by cancer therapies: management strategies and economic impact. Support Care Cancer. 2010;18(8):1061-79.
10. Lalla RV, Latortue MC, HongCH, Ariyawardana A, D'Amato-Palumbo S, Fischer DJ, et al. A systematic review of oral fungalinfections in patients receiving cancer therapy. Support Care Cancer. 2010;18(8):985-92.
11. Hovan AJ, Williams PM, Stevenson-Moore P, Wahlin YB, Ohrn KE, Elting LS, et al. A systematic review of dysgeusia induced by cancer therapies. Support Care Cancer. 2010;18(8):1081-7.

For full references and more information please refer to CCO's Symptom Management Guide-to-Practice document.

Notes:

Edmonton Symptom Assessment System (ESAS)

Alberta Health Services | Covenant Health

Edmonton Symptom Assessment System:
(revised version) (ESAS-R)

Please circle the number that best describes how you feel NOW:

No Pain	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Pain
No Tiredness *(Tiredness = lack of energy)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Tiredness
No Drowsiness *(Drowsiness = feeling sleepy)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Drowsiness
No Nausea	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Nausea
No Lack of Appetite	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Lack of Appetite
No Shortness of Breath	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Shortness of Breath
No Depression *(Depression = feeling sad)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Depression
No Anxiety *(Anxiety = feeling nervous)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Anxiety
Best Wellbeing *(Wellbeing = how you feel overall)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Wellbeing
No _____ Other Problem *(for example constipation)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible _____

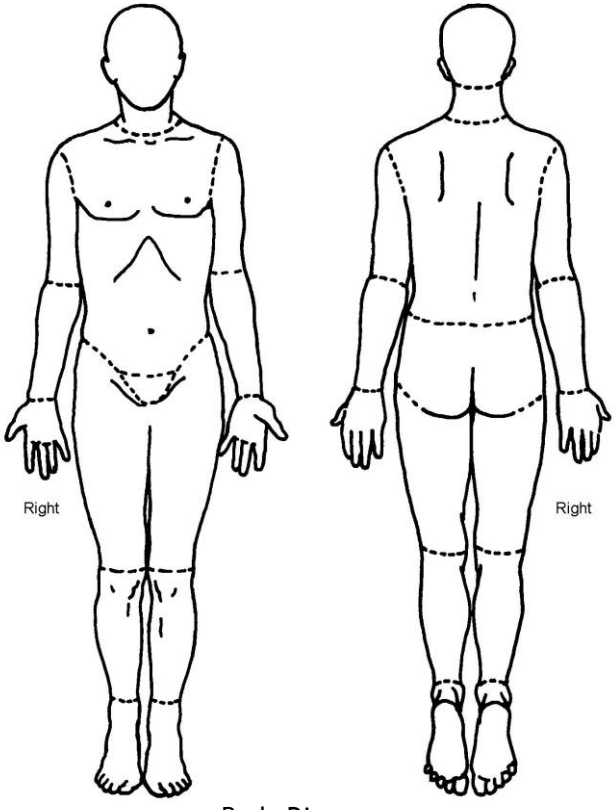
Patient's Name _____

Date _____ Time _____

Completed by (check one):
- ☐ Patient
- ☐ Family caregiver
- ☐ Health care professional caregiver
- ☐ Caregiver-assisted

BODY DIAGRAM ON REVERSE SIDE

Please mark on these pictures where it is you hurt.



Body Diagram

Disclaimer:

Care has been taken by Cancer Care Ontario's Symptom Management Group in the preparation of the information contained in these pocket guides.

Nonetheless, any person seeking to apply or consult the pocket guide is expected to use independent clinical judgment and skills in the context of individual clinical circumstances or seek out the supervision of a qualified specialist clinician.

CCO makes no representation or warranties of any kind whatsoever regarding their content or use or application and disclaims any responsibility for their application or use in any way.

Dates of Publication:

August 2010 - Pain, Dyspnea, Delirium and Nausea & Vomiting

July 2012 – Loss of Appetite, Bowel Care, Oral Care